# RSET SQG Subcommittee

- Task 1 - SQG Cost-effectiveness & reliability - DELAY
- Task 2 - Develop regional data compilation/database structure – SEDQUAL – DONE
- Task 3 - Develop database structure/format, Sept 03 Sedqual decision – DONE
- Task 4 - Evaluate WA reliability and AET development – See Ecology Phase 2 Report/SAIC/Avocet – DONE

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- Task 5 - Conduct field verification of FW screening levels – SQG Subcommittee recommendations for SL/MLs pending – DELAY
- Task 6 - Identify beneficial use-specific SLs – pending SL/MLs – DELAY
- Task 7 - Develop reference site evaluation procedure – pending SL/ML decision – DELAY
- Task 8 - Develop disposal site-specific screening levels – pending SL/MLs –DELAY

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- Sept 03 guideline recommendations spurred policy white paper
- Policy committee asked for process recommendations
- SQG subcommittee issue paper suggests short-term and mid-term recommendations
- Short-term – use “Minor adverse effects” as ML for all disposal in LC DMEF
- Mid-term – re-evaluate PSDDA/DMMP site disposal alternatives in light of ESA and LC disposal alternatives, e.g., flow-lane, shoreline, unconfined open-water and upland

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ML Definition: Background info

**PSDDA/DMMP:**

- **Site condition 2 –** Minor adverse effects. No significant acute toxicity onsite.
- **Biological Disposal Guidelines**
- No two bioassays exhibiting the above conditions (SC1-sublethal effects); or no one bioassay response greater than 30 percent over reference conditions and statistically significant with respect to reference conditions; water column larval response does not exceed 0.01 of the LC50 after 4-hour mixing; and no bioaccumulation levels exceeding a human health tissue guideline value.
- **Chemical Disposal Guidelines**
- ML2, defined as the highest AET for a series of biological indicators (i.e., higher concentrations are expected to result in effects measured by all of the biological indicators).

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## ML Biological Definition:

- Recommend use of CSL biological definition
- Based on ASTM protocols / round robin testing

**Table 2-2. SQS and CSL Endpoints for Biological Tests**

| Test | QA Control | QA Reference | SQS | CSL |
|---|---|---|---|---|
| *Hyalella azteca* 10-day mortality | C ≤ 20% | R ≤ 25% | T – R > 10% | T – R > 25% |
| *Chironomus tentans* 10-day mortality | C ≤ 30% | R ≤ 30% | T – R > 10% | T – R > 25% |
| *Chironomus tentans* 10-day growth | CF ≥ 0.48 mg/ind | RF/CF ≥ 0.8 | T/R < 0.8 | T/R < 0.7 |
| Microtox® decrease in luminescence | CF/CI ≥ 0.72, CF/CI ≤ 1.1 | RF/CF ≥ 0.8, RF/CF ≤ 1.1 | T/R < 0.85 | T/R < 0.75 |

C = Control, CI = Control Initial, CF = Control Final
R = Reference, RF = Reference Final
T = Test Sample

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ML Biological Definition:

- Recommend use of CSL biological definition
- Based on ASTM protocols / round robin testing

**Table 3-1. Phase 1 Report: SQS and CSL Endpoints for Sublethal Biological Tests**

| Test | QA Control | QA Reference | SQS | CSL |
|---|---|---|---|---|
| *Hyalella azteca* 28-day mortality | C ≤ 20% | R ≤ 30% | T – R > 10% | T – R > 25% |
| *Hyalella azteca* 28-day growth | CF ≥ 0.15 mg/ind | RF ≥ 0.15 mg/ind | T/R < 0.75 | T/R < 0.6 |
| *Chironomus tentans* 20-day mortality | C ≤ 32% | R ≤ 35% | T – R > 15% | T – R > 25% |
| *Chironomus* | | | | |

C = Control, CI = Control Initial, CF = Control Final
R = Reference, RF = Reference Final
T = Test Sample

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ML Chemical Recommendation:

;Recommend use of Floating Percentile values for increased reliability

;Focus on 80% - 85% Sensitivity

**Table 3-10. Floating Percentile Results for the CSL Effects Level**

| Measure of Reliability (%) | 95% Sensitivity | 90% Sensitivity | 85% Sensitivity | 80% Sensitivity | 75% Sensitivity |
|---|---|---|---|---|---|
| False Negatives | 5 / 5 | 10 / 10 | 15 / 15 | 20 / 20 | 25 / 25 |
| False Positives | 50 / 50 | 37 / 44 | 26 / 24 | 23 / 17 | 21 / 16 |
| Sensitivity | 95 / 95 | 90 / 90 | 85 / 85 | 80 / 80 | 75 / 75 |
| 2003 Efficiency | 50 / 50 | 63 / 56 | 74 / 76 | 77 / 83 | 79 / 84 |
| 1988 Efficiency | 66 / 65 | 71 / 67 | 76 / 78 | 77 / 82 | 78 / 83 |
| Overall Reliability | 73 / 72 | 77 / 73 | 80 / 81 | 79 / 82 | 78 / 80 |